

## **Abstracts**

### **DE 198 21 467 A1**

**Novelty** - The system for high resolving measurement of number of revolutions is developed, which evaluates the angular positional setting of three (with two dimensional differential drive) gear wheels (Z1, Z2, Z3) to each other, and from which the information is obtained regarding the number of revolutions, which the gear wheel (Z1) has carried out

**Use** - Absolute measurement of revolutions of a shaft for automation purposes.

**Advantage** - Simple system which can be produced cost effectively, needs small installation vol. and provides quick preparation of measurement value less than 1 microsecond and facilitates insertion of multitrack sensors.

### **FR 2 697 081 A**

The position indicator includes two toothed wheels which have optical sensors which read their angular positions. The wheels are driven by engagement with two identical toothed wheels on a driving shaft connected to an accessory whose travel is to be indicated. The driven toothed wheels have slightly different numbers of teeth.

The absolute angular position of the first driven wheel is the sum of its indicated angular position and a coefficient multiplied by the difference between the indicated angular positions of the first and second driven wheels.

**Advantage** - Travel of motor vehicle accessories such as sunshine roofs may be indicated very accurately over extended range of measurement.

### **EP 0 046 232 A**

The encoder consists of at least two coaxial coding discs whose codes are read separately and that have teeth around their peripheries and that are connected together via a gear. The gear consists of a pinion or a toothed belt (12). The pinion or toothed belt is at angle to the axis of the coding discs (2,9). The toothed belt passes over two deflection rollers (13,14) that press it against a part of the periphery of the coding discs. The coding discs have different diameters and numbers of teeth.

Alternatively the discs may have the same diameter and the belt (or pinion) may be conical.

The advantage lies in the coding discs only moving a relatively small amount w.r.t. one another during one revolution and in avoiding damaging the gear at high speeds and high positive and negative acceleration. Numerous belt teeth engage numerous disc teeth so that the loading per tooth is reduced over that encountered with the pinion version. The elasticity of the belt takes up any play, which is another advantage over a pinion.